

WHAT IS CLAIMED IS:

1. An apparatus for producing matured compost-like material comprising:

5 a vertical vessel which is provided at an upper side thereof with an inlet for organic waste as material to be treated and provided at a lower side thereof with an outlet for the material treated with heat;

heating panel(s) for heating the material which is disposed to be in contact with the material within the vessel;  
10 and

moving means for moving the material within the vessel from the inlet toward the outlet, wherein

the organic waste fed through the inlet is continuously heated and dried and is further treated with heat at  
15 temperature of 100-200°C.

2. An apparatus for producing matured compost-like material as claimed in claim 1, wherein a temperature detector is arranged in the vicinity of the outlet and a temperature controlling means is provided for controlling such that the  
20 temperature measured by the temperature detector becomes a predetermined value.

3. An apparatus for producing matured compost-like material as claimed in claim 2, wherein said temperature controlling means is a means for controlling the feeding speed  
25 of said organic waste into said vessel.

4. An apparatus for producing matured compost-like material as claimed in claim 2, wherein said temperature controlling means is a means for controlling the moving speed

of the material within said vessel.

5        5. An apparatus for producing matured compost-like material as claimed in claim 2, wherein said temperature controlling means is a means for controlling the heating temperature of said heating panel.

6. An apparatus for producing matured compost-like material as claimed in claim 2, wherein said temperature controlling means controls such that said temperature measured by said temperature detector becomes 110-200°C.

10       7. An apparatus for producing matured compost-like material as claimed in claim 1, wherein an agitator is provided for agitating the material on the heating panel.

8. An apparatus for producing matured compost-like material as claimed in claim 1, wherein the heating panels  
15 are arranged in multiple stages.

9. An apparatus for producing matured compost-like material as claimed in claim 8, wherein first heating panels each having an opening at the center thereof and second heating panels each having a gap between the outer periphery  
20 thereof and the inner surface of the vessel are arranged alternatively, and

the material falls down from the first heating panel through the opening and falls down from the second heating panel through the gap.

25       10. An apparatus for producing matured compost-like material as claimed in claim 9, wherein rakes are provided for agitating the material on the respective heating panels.

11. An apparatus for producing matured compost-like

material comprising:

a vessel which is provided with an inlet for organic waste and with an outlet for the material treated with heat; and

5 a heating means for heating and drying the material within the vessel and further treating the material with heat at temperature of 100-200°C; wherein

the organic waste is continuously fed through the inlet and the material treated with heat is continuously discharged  
10 through said outlet, and

a temperature detector is arranged in the vicinity of the outlet and a temperature controlling means is provided for controlling such that the temperature measured by the temperature detector becomes a predetermined value.

15 12. An apparatus for producing matured compost-like material as claimed in claim 11, wherein said temperature controlling means is a means for controlling the feeding speed of said organic waste.

20 13. An apparatus for producing matured compost-like material as claimed in claim 11, wherein said temperature controlling means is a means for controlling the moving speed of the material within said vessel.

25 14. An apparatus for producing matured compost-like material as claimed in claim 11, wherein said temperature controlling means is a means for controlling the heating temperature of said heating means.

15. An apparatus for producing matured compost-like material as claimed in claim 11, wherein said temperature

controlling means controls such that said temperature measured by said temperature detector becomes 110-200°C.

16. A method of producing matured compost-like material by treating organic waste with heat after heating and drying  
5 the organic waste, wherein

the heating and drying process is conducted after polymer is added to and mixed with the organic waste and, then, the heat treatment is conducted.

17. A method of producing matured compost-like material  
10 as claimed in claim 16, wherein said polymer is one or more selected from a group consisting of starch, chitosan, polyacrylamide, polymethacrylamide, polyacrylic acid, copolymer of acrylamide and acrylic acid, copolymer of (meth)acryloyl oxyethyl trimethyl ammonium chloride and  
15 acrylamide, and copolymer of (meth)acryloyl oxyethyl trimethyl ammonium chloride and acrylic acid and acrylamide.

18. A method of producing matured compost-like material as claimed in claim 16, wherein said polymer is added in the form of aqueous solution, dispersion liquid, and emulsion.

20 19. A method of producing matured compost-like material as claimed in claim 18, wherein the polymer concentration in the aqueous solution of polymer is 0.1-1.0 weight %.

20. A method of producing matured compost-like material as claimed in claim 16, wherein said organic waste is organic  
25 sludge having solid matter concentration about 2% and the adding amount of polymer relative to the organic waste is 0.6-1.5% in dry weight ratio.

21. A method of producing matured compost-like material

as claimed in claim 16, wherein said organic waste is poultry dropping having solid matter concentration about 30% and the adding amount of polymer relative to the organic waste is 0.1-0.5% in dry weight ratio.

5           22. A method of producing matured compost-like material as claimed in claim 16, wherein a mixture obtained by adding and mixing polymer into the organic waste is granulated by heating the mixture with agitating so as to obtain granular matured compost-like material.

10           23. A method of producing matured compost-like material as claimed in claim 22, wherein the mean grain size of the matured compost-like material is 2-5 mm.

          24. A method of producing matured compost-like material as claimed in claim 16, wherein, after polymer and potassium  
15 component are added to and mixed with the organic waste, the mixture is heated and dried and is then treated with heat.

          25. A method of producing matured compost-like material as claimed in claim 16, wherein the material is treated with heat at temperature of 100-200°C after heated and dried.

20           26. A method of producing matured compost-like material as claimed in claim 16, wherein the time of the heating and drying process is 10-15 hours and the time for the heat treatment after that is 3-6 hours.

          27. A method of producing matured compost-like material  
25 by treating organic waste with heat after heating and drying the organic waste, wherein

          the heating and drying process is conducted after potassium component is added to and mixed with the organic

waste and, then, the heat treatment is conducted.

28. A method of producing matured compost-like material as claimed in claim 27, wherein said potassium component is one or more selected from a group consisting of powder of potassium sulfate, powder of potassium chloride, and food waste containing potassium.

29. A method of producing matured compost-like material as claimed in claim 27, wherein the potassium component is added such that the content of potassium in the matured compost-like material becomes 2-5 weight % (dry weight ratio).

30. A method of producing matured compost-like material as claimed in claim 27, wherein the moisture content of the organic waste is 50-85%.

31. A method of producing matured compost-like material as claimed in claim 27, wherein the material is treated with heat at temperature of 100-200°C after heated and dried.

32. A method of producing matured compost-like material as claimed in claim 27, wherein the time of the heating and drying process is 10-15 hours and the time for the heat treatment after that is 3-6 hours.